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**Title of Document:** Downtown Norfolk Streetscape Handbook

**Prepared By:** Jonathan Barnett and James Urban

**Prepared For:** City of Norfolk

**Date of Preparation:** September 1995 (Modified January 1998)

**Status (as of January 2012):** No action taken by City Council to adopt these guidelines.  
Some actions reaffirmed by City Council in 2009.

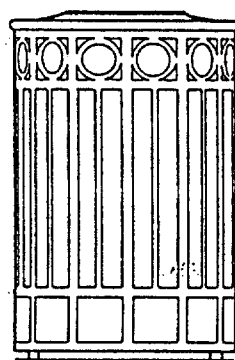
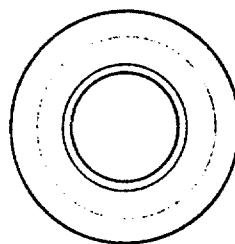
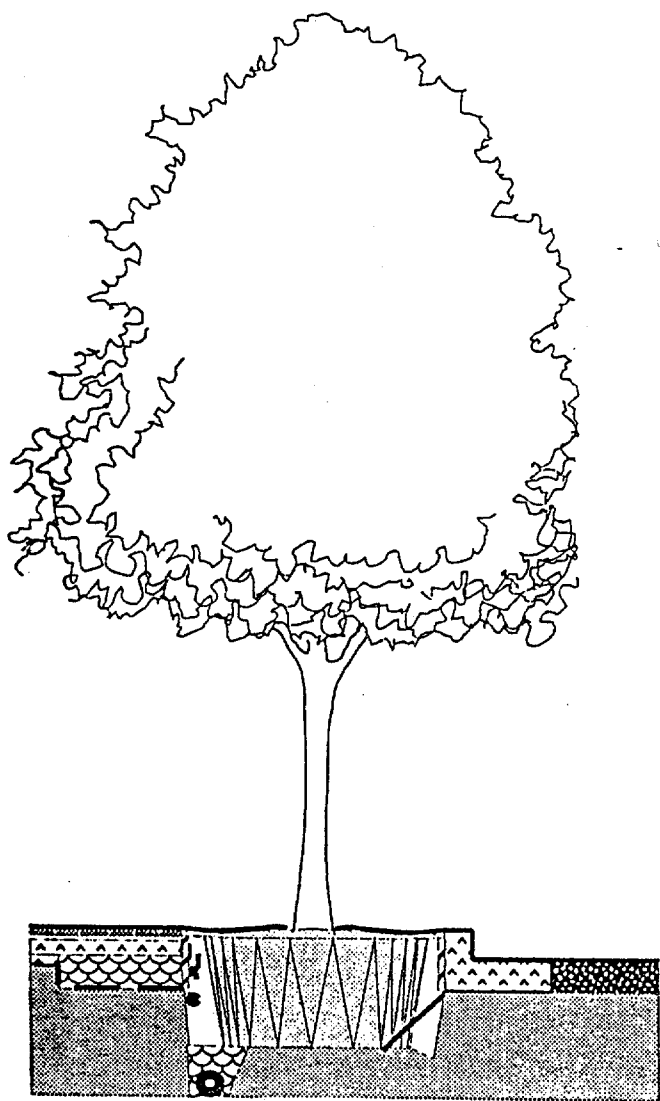
**Civic League(s)/Organization(s) Affected:** Downtown, Freemason Street Area  
Association

The information included in this document may not reflect current City of Norfolk policy.  
For more information on this document, contact the City of Norfolk Department of  
Planning and Community Development.

**Downtown Norfolk**

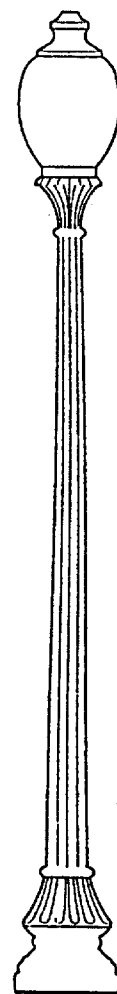
# Streetscape Handbook

Modifications  
January, 1998



Prepared for  
the City of Norfolk Virginia  
by Jonathan Barnett, FAIA, AICP  
and James Urban, ASLA

September 1995



## **Modifications to Downtown Norfolk Streetscape Handbook**

In September 1995, the City of Norfolk published the "Downtown Norfolk Streetscape Handbook" which established standards for the construction of new sidewalks and street improvements in the downtown area of the city. After building sections of Granby Street, designing additional sections of Boush Street and working with the standards as they relate to MacArthur Center, the city no longer believes that it can afford to build the remaining portions of downtown to these standards and has requested that modifications be made to reduce cost. The following modifications have been proposed to achieve the needed cost reductions. These modifications are presented as addendum to the adopted handbook.

### **Summary of changes:**

The modifications to the standards generally include six items.

1. Changing the secondary street sidewalk paving from brick to concrete.
2. Changing the boulevard verges from brick paving to lawn.
3. Changing Plume Street from a primary street to a secondary street and eliminating the requirement for a designated street tree species.
4. Allowing greater flexibility to street tree placement on secondary streets, eliminating trees in many areas and making the spacing random in others.
5. Modifying the root space detail on secondary streets to permit alternate methods of including rooting under sidewalks.
6. Widening the tree spacing on all streets to a maximum of 40' on center.

**Page 2**  
**Table of Contents**

Column Two, Line 2

Delete: Sidewalk Plan, Boulevard with Brick Verge

Insert: Boulevard with Grass Verge

Column Two, Line 6

Delete: Enlarged Boulevard Sidewalk Plan, Showing Brick Verge, Grass Verge

Insert: Revised Sidewalk Plan, Secondary Streets, Concrete Paving

Column Two, Line 8

Delete: Sidewalk Plan, Boulevard with Grass Verge

Insert: Sidewalk Plan, Secondary Streets, Tree in Concrete Paving

After Column Two, Line 21

Insert: Sidewalk Plan, Secondary Streets, Tree Planting, Alternative Root Space,  
Structural Plant Mix

Plan, Secondary Streets, Tree Planting, Alternative Root Space, Structural  
Plant Mix

Section, Secondary Streets, Tree Planting, Alternative Root Space,  
Structural Plant Mix Perpendicular to Curb

Section, Secondary Streets, Tree Planting, Alternative Root Space,  
Structural Plant Mix Parallel to Curb

Sidewalk Plan, Secondary Streets, Tree Planting, Alternative Root Space,  
Root Paths

Plan, Secondary Streets, Tree Planting, Alternative Root Space, Root Paths

Section, Secondary Streets, Tree Planting, Alternative Root Space, Root Paths  
Perpendicular to Curb

Section, Secondary Streets, Tree Planting, Alternative Root Space, Root Paths  
Parallel to Curb

Detail, Root Paths

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	Elevation and Top of Standard Trash Receptacle	

## **The Downtown Paving Standard**

### **Page 5**

Delete: Column 2, Paragraph 2, Line 17 as indicated:

Insert: 30 to 40 feet

## The Downtown Paving Standard

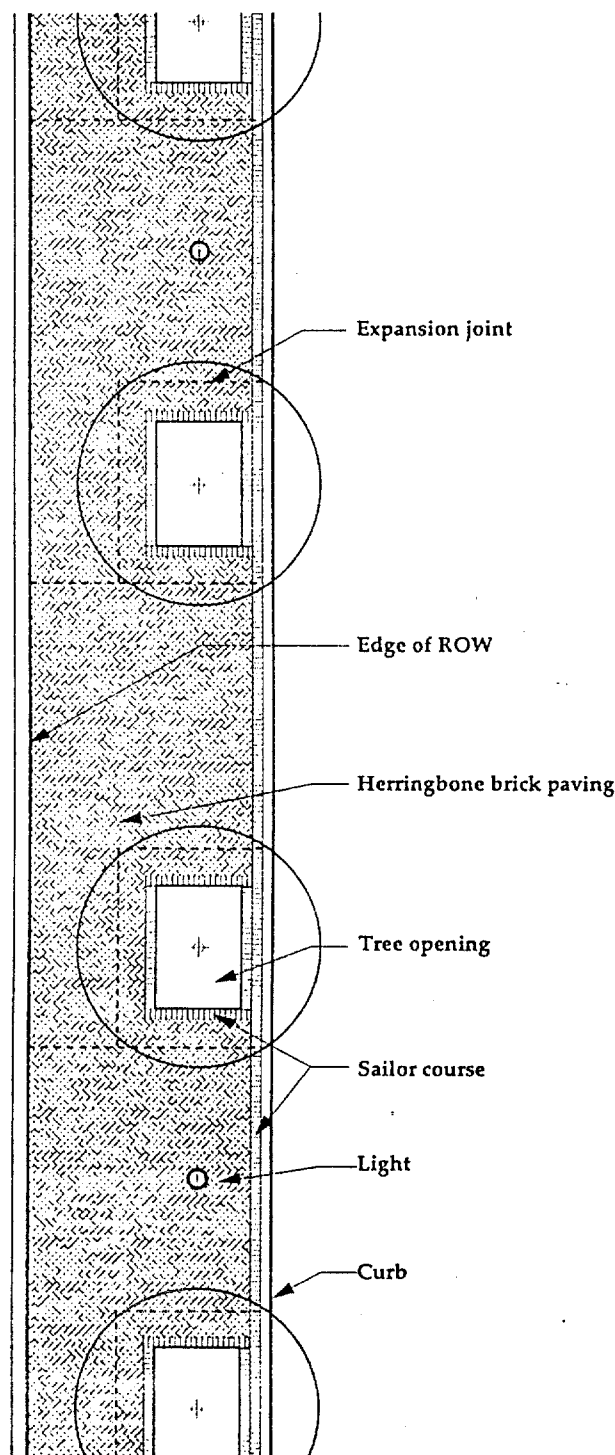
The sidewalk plan [1] shows the basic downtown paving standard, a brick sidewalk consisting of Cherokee light range brick, wire cut, tight set, and laid in a herring-bone pattern over concrete. The 1987 Main Street paving design included an ornamental granite verge and a cast-iron tree grate, both of which have been eliminated from the current standard. The herring-bone brick pattern is the same as the design as built on Main Street, but adds a single header or "sailor" course, hand set (except adjacent to the tree opening where it should be set in mortar), at the edge of the sidewalk nearest the curb, replacing the granite verge. Instead of a tree-grate, the soil in the tree-opening is covered by a light-weight, gravel mulch, or the tree opening can be planted with ground cover, if this alternative is approved by the Department of Recreation, Parks and General Services. These changes, including the improved planting details

described later in this document, reduce the over-all unit cost per linear foot of the sidewalk and tree installation by about 40%; while achieving a comparable quality of design.

Tree openings are to be 8 feet in the dimension parallel to the curb, and should be 5' 6" wide wherever sidewalk width permits. No tree opening should be less than 4' wide, except, perhaps, where sidewalks are unusually narrow and the exception is approved by the Design Review Committee and the City Planning Commission. Tree openings should be regularly spaced, with trees ~~25 to 30 feet~~ on center. Light poles, as needed to meet lighting requirements, should be placed in a regular pattern on the center-line of the tree openings, and at the mid point between tree openings—or as close as possible to the mid-point if site conditions make exact placement impossible.



Downtown Paving Standard



## **Variations in the Downtown Paving Standard to Meet Special Conditions**

### **Page 14**

Delete: Column 2, Paragraph 2:

Insert: 3. Downtown perimeter streets or boulevards will have concrete sidewalks with grass verges. Narrow secondary streets will have concrete sidewalks.

Delete: Illustration 14: Area Plan- Paving Types

Insert: Illustration 14: Revised Area Plan- Paving Types



## Variations in the Downtown Paving Standard to Meet Special Conditions

The map [14] shows the locations for 3 variations in the paving standards for downtown sidewalks.

1. Streets currently having granite verges will remain essentially the same as the design that can be found on Main Street now, except that tree grates will be omitted and the planting openings enlarged.

2. The Granby Street district, where street grades were changed to permit the construction of a pedestrian mall that at one time replaced the usual street right-of-way,

will require somewhat different construction methods as sidewalks and streets are brought into conformity with the downtown standards.

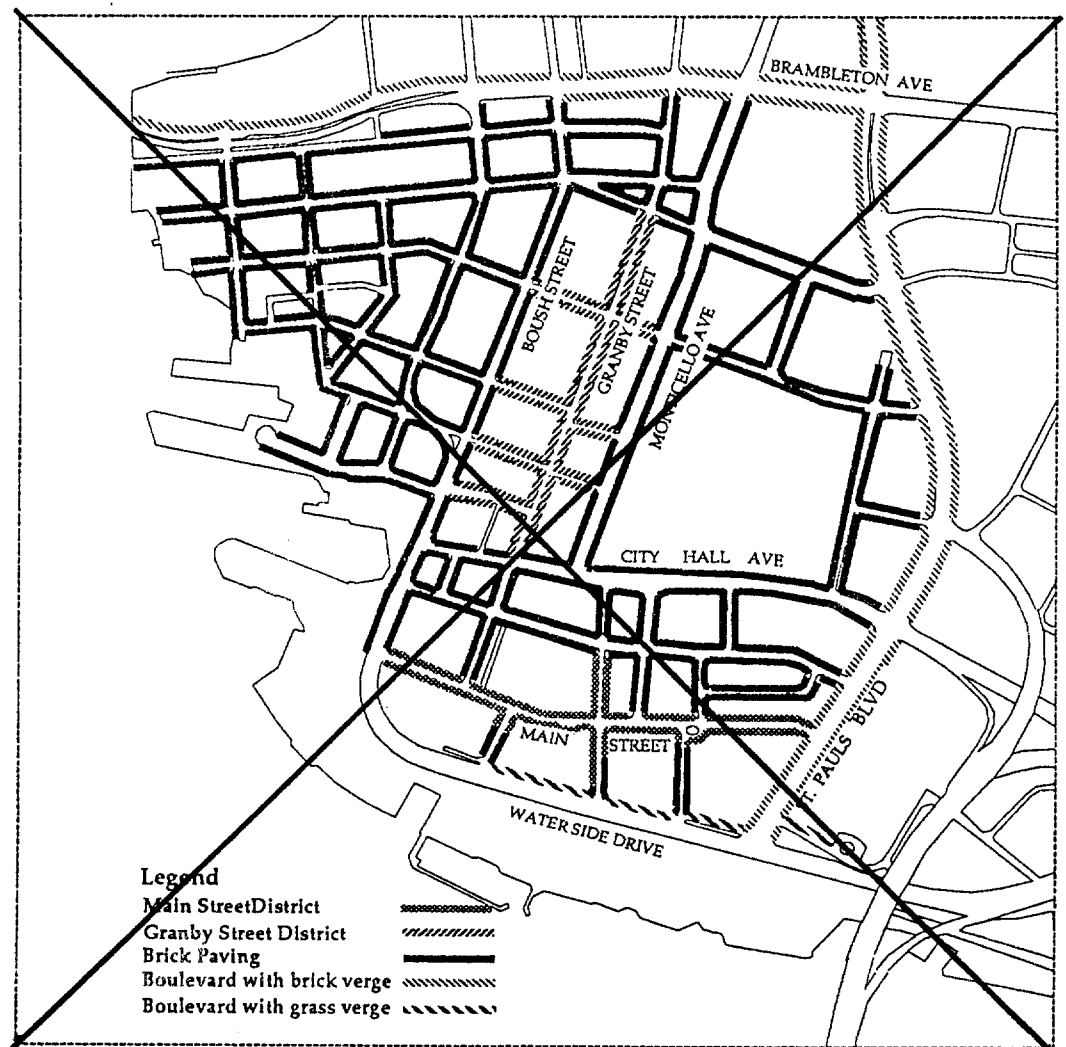
3. ~~Downtown perimeter streets or boulevards will~~

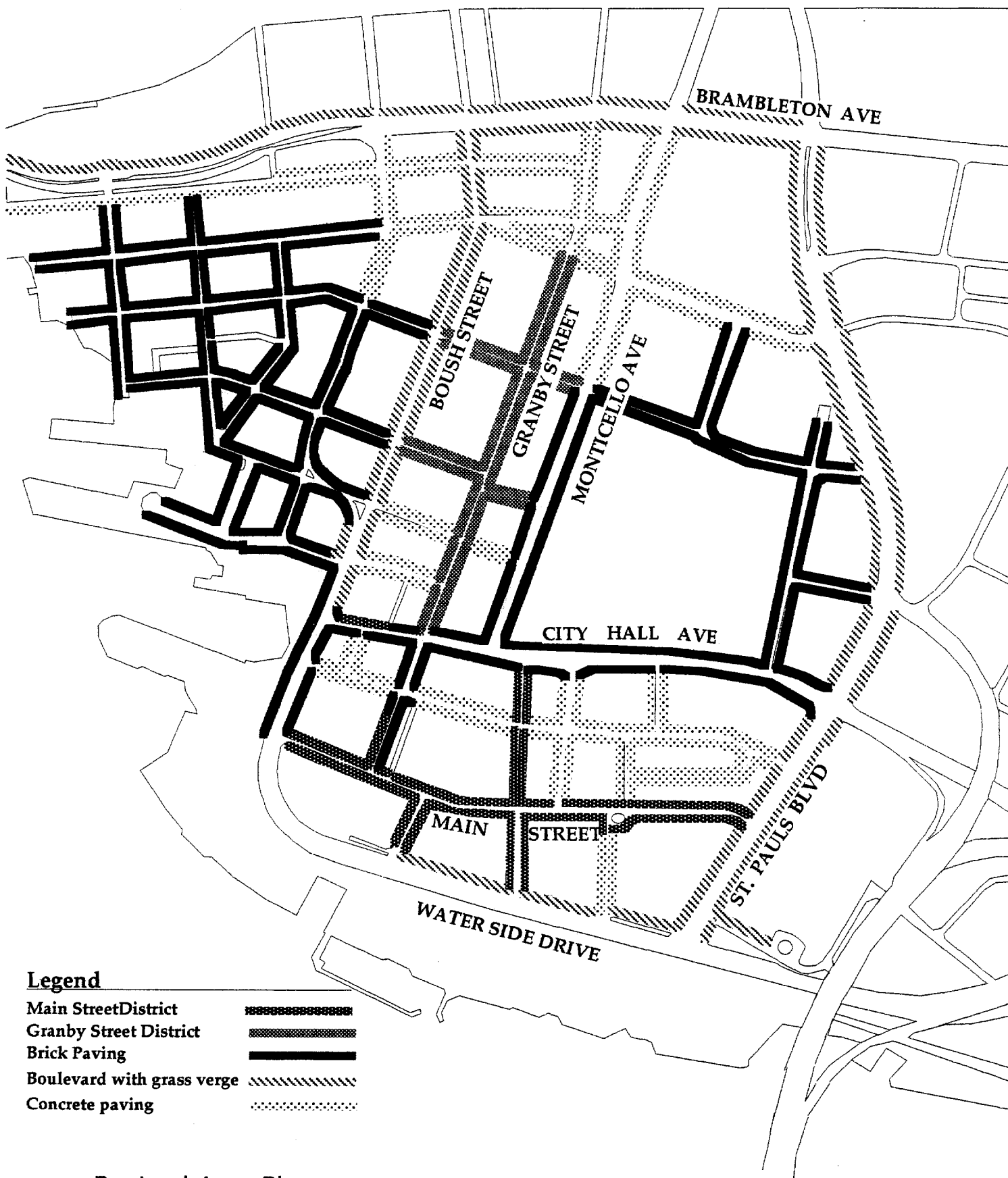
~~continue to have concrete sidewalks and brick verges, similar to the existing brick verges on St. Paul's Boulevard. (A portion of Waterside Boulevard has concrete sidewalks and grass~~

~~verges; these should remain as is.)~~

The majority of downtown streets, denoted as having brick-paved sidewalks on the map, will follow the downtown paving standard outlined above.

Area Plan  
Paving Types





14

Revised Area Plan  
Paving Types

**Page 22**

Delete: Column 1, Lines 1-11

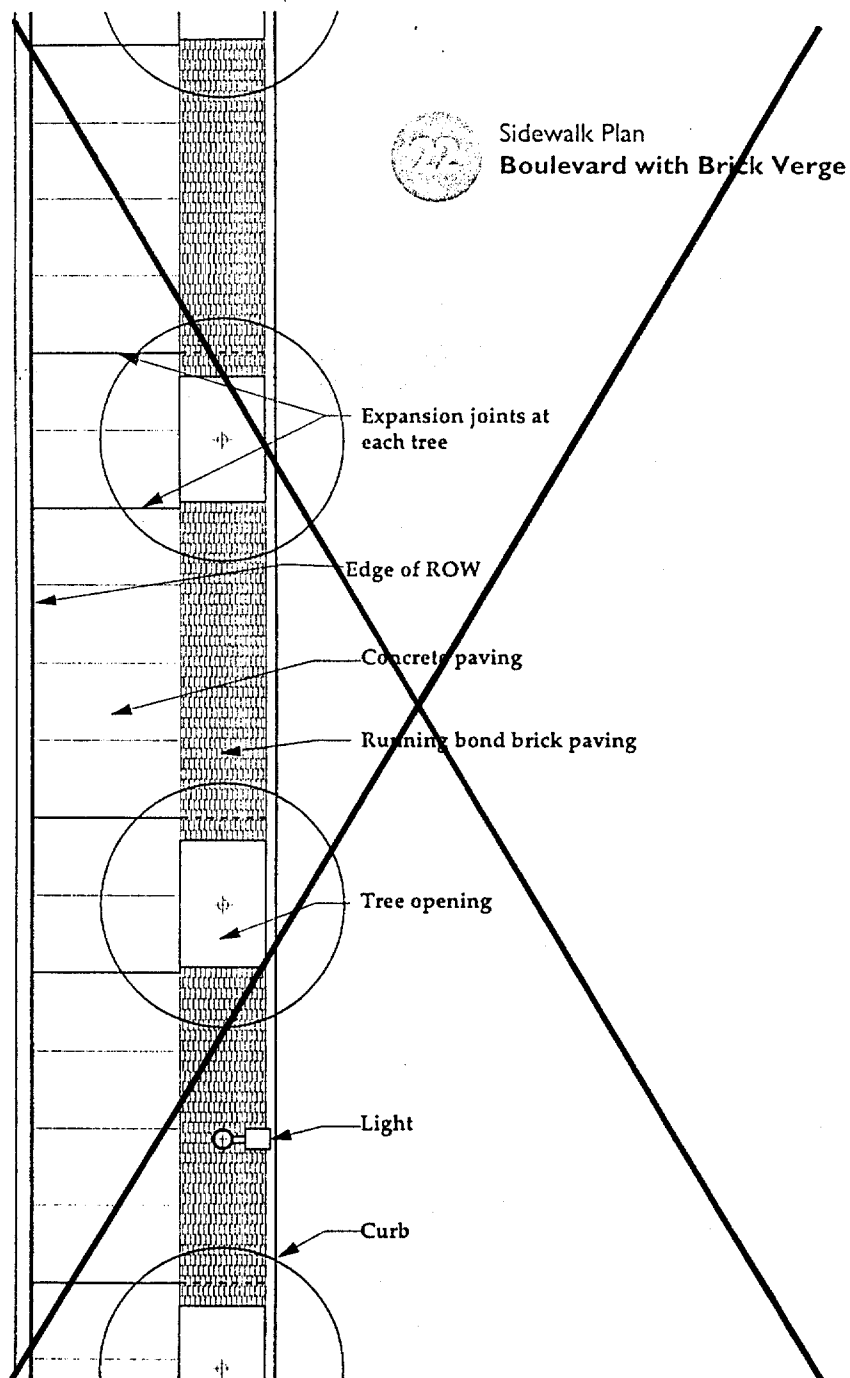
Insert: Illustration 22 shows a typical concrete sidewalk with grass verge on St. Paul's Boulevard, Brambleton Avenue, the north side of Waterside Drive and Union Street. A more detailed plan of the concrete paving with grass verge is shown in Illustration 25.

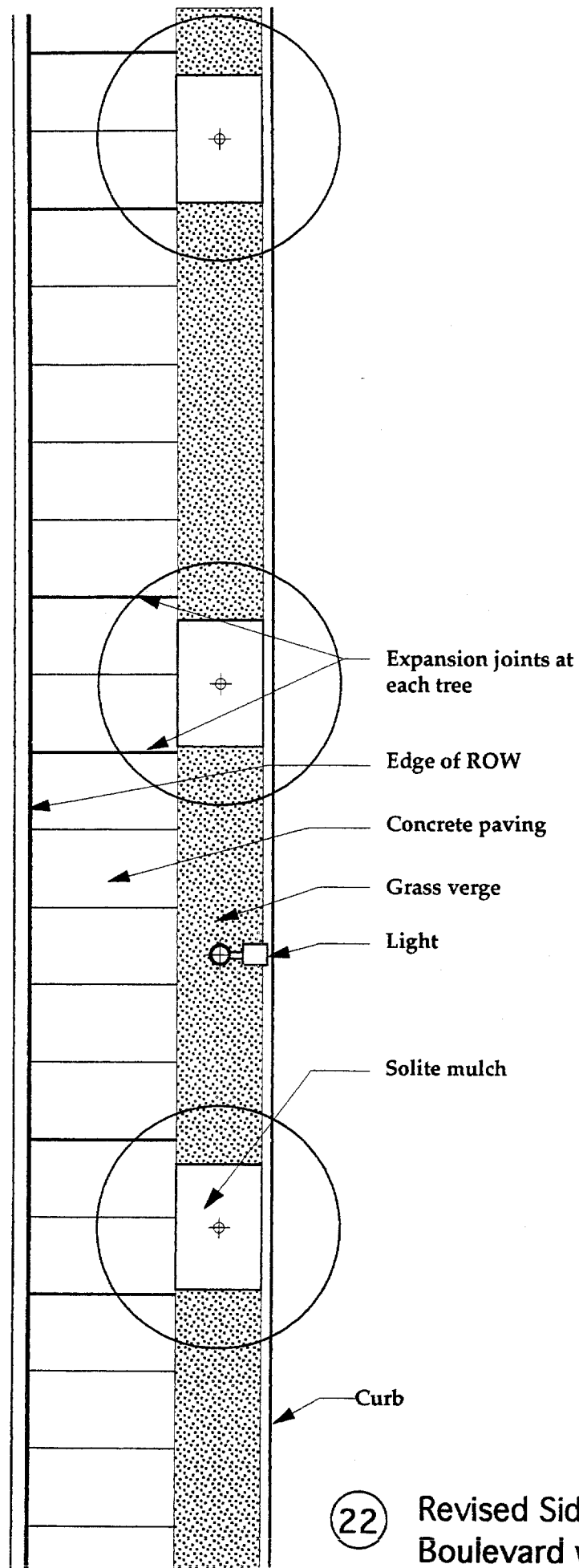
Delete: Illustration 22- Sidewalk Plan: Boulevard with Brick Verge.

Insert: Illustration 22- Revised Sidewalk Plan: Boulevard with Grass Verge

## Downtown Perimeter Streets or Boulevards

Illustration 22 shows a typical concrete sidewalk on St. Paul's Boulevard and on Brambleton Avenue where there will be a verge of Cherokee light range, wire-cut brick, tight set, similar to installations already in place on parts of St. Paul's Boulevard. Illustration 23 shows a corner of a typical intersection with concrete sidewalks, and how this sidewalk meets the brick paving of the sidewalk at the intersecting street.





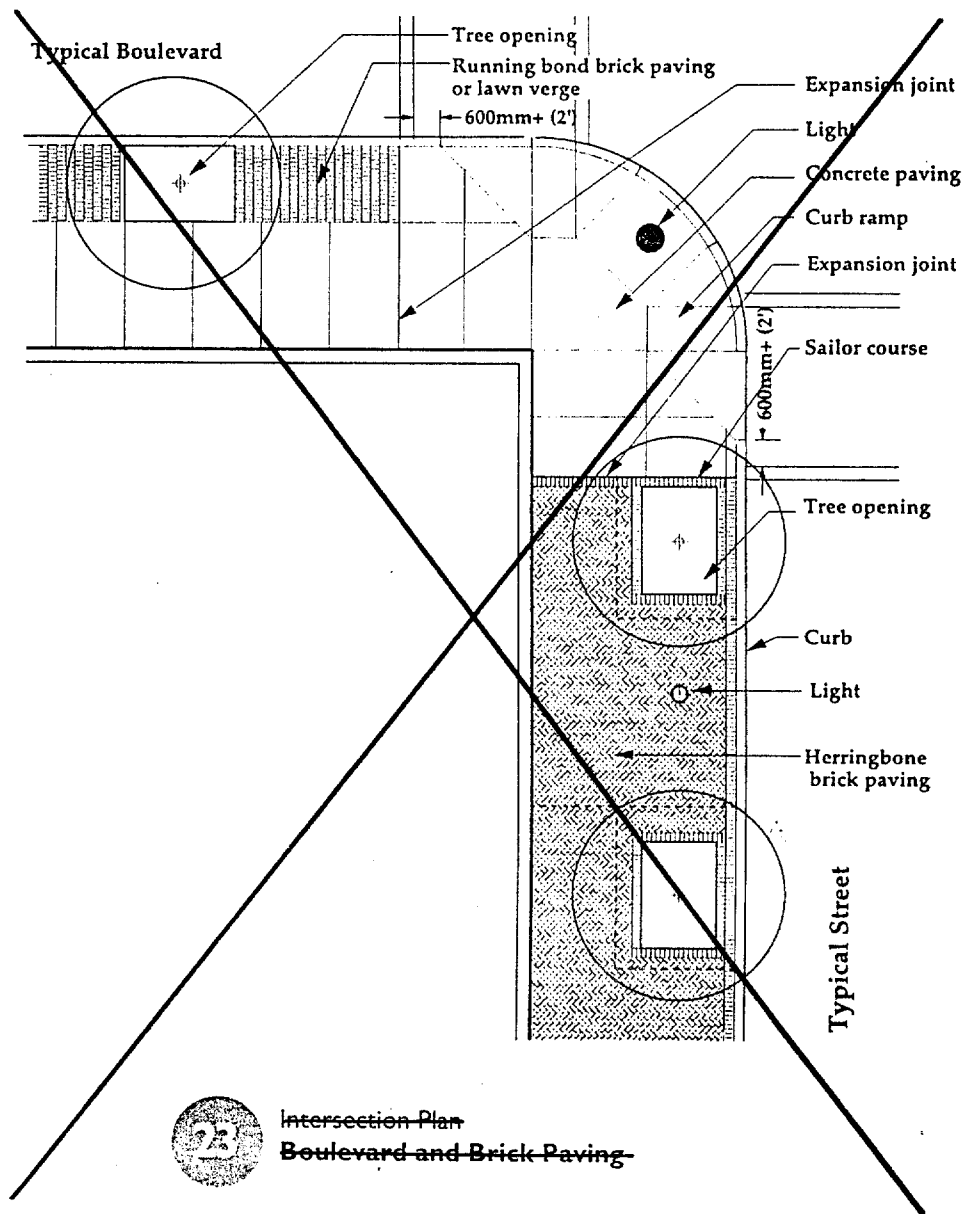
22

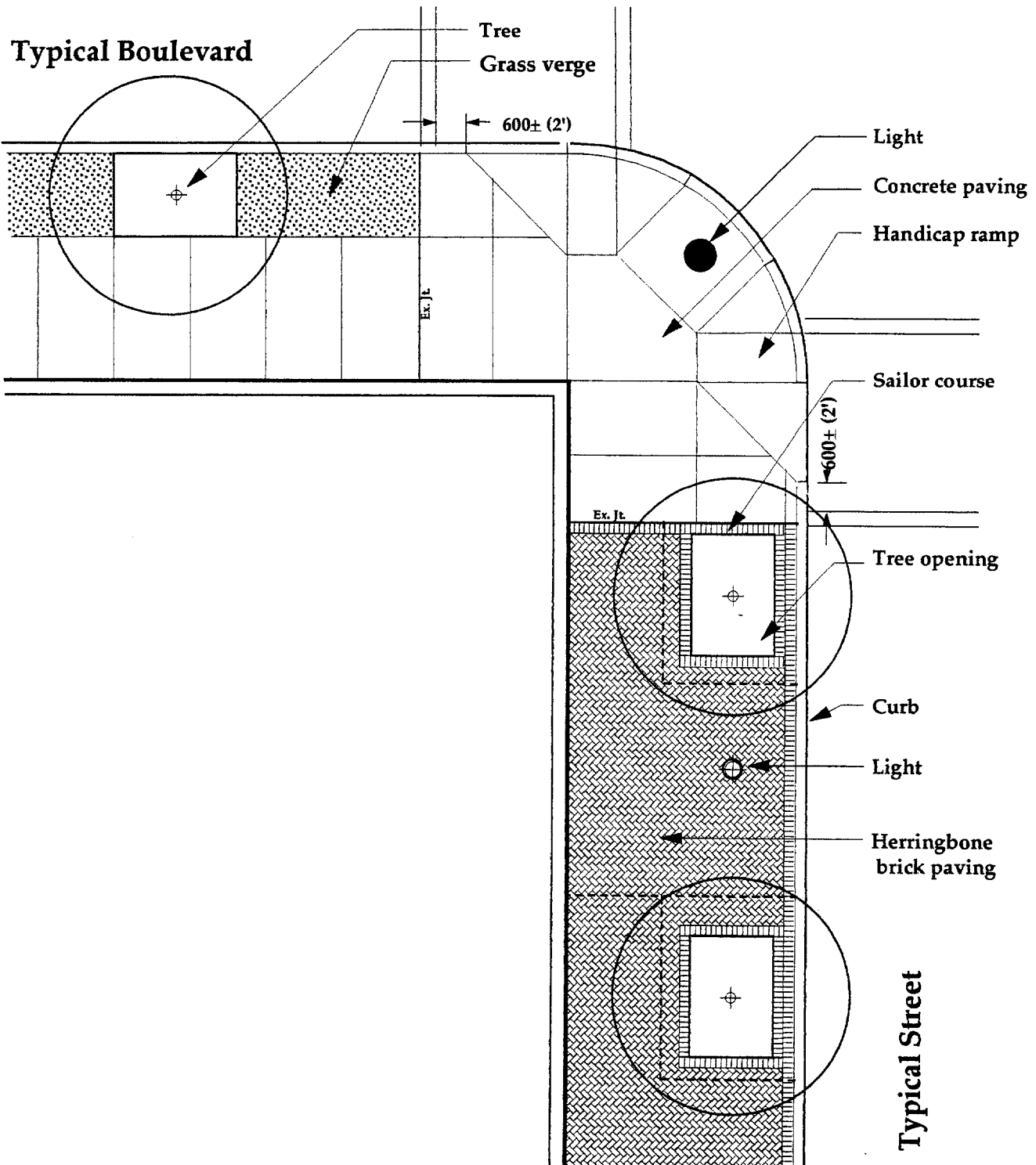
Revised Sidewalk Plan  
Boulevard with Grass Verge

**Page 23**

**Delete:** Illustration 23- Intersection Plan: Boulevard and Brick Paving

**Insert:** Illustration 23- Revised Intersection Plan: Boulevard and Brick Paving





**(23)** Revised Intersection Plan  
Boulevard and Brick Paving



**Page 24**

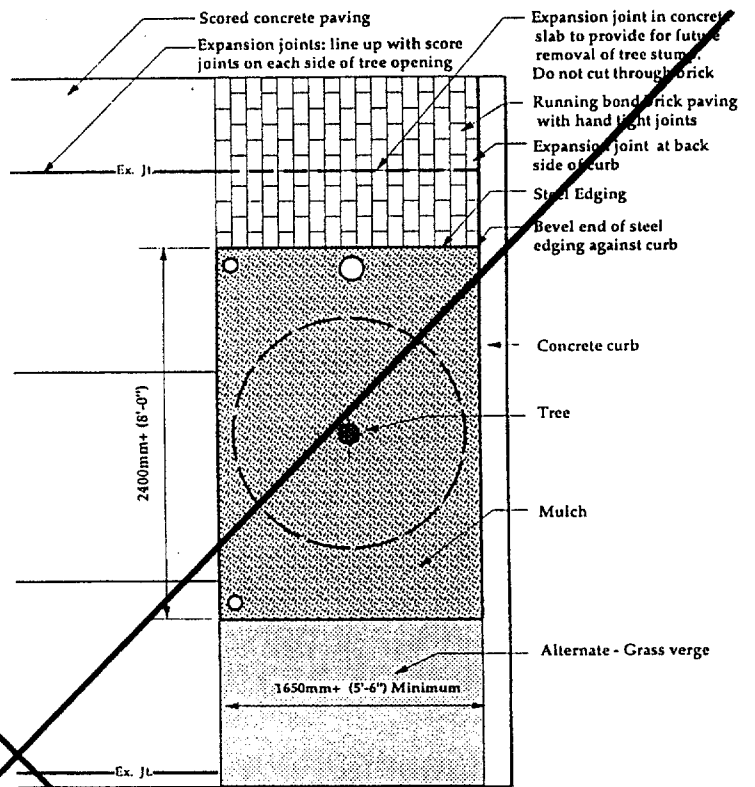
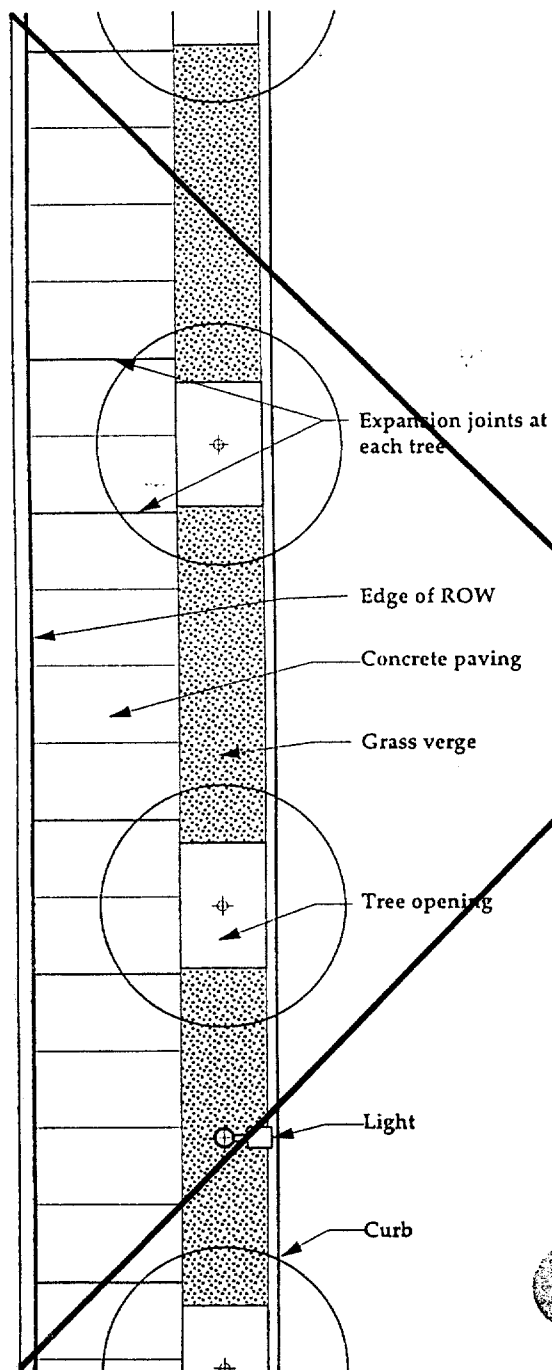
Delete: Illustration 24- Sidewalk Plan: Boulevard with Grass Verge

Insert: Illustration 24- Revised Sidewalk Plan: Secondary Streets: Concrete Paving

Delete: Illustration 25- Sidewalk Plan: Boulevard Paving with Grass Verge

Insert: Illustration 25- Revised Sidewalk Plan: Secondary Streets: Tree in Concrete  
Paving

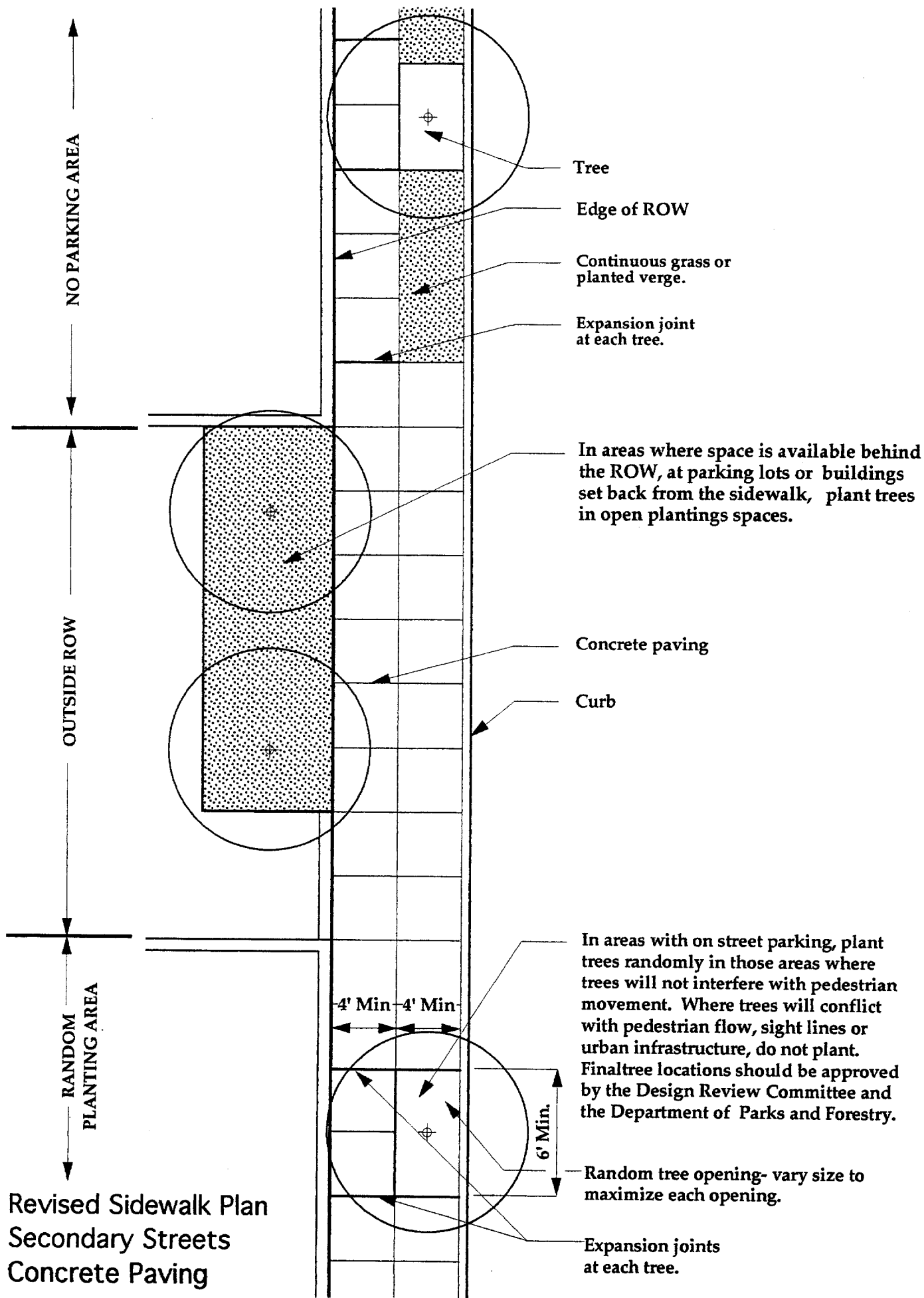
10000  
 9000  
 8000  
 7000  
 6000  
 5000  
 4000  
 3000  
 2000  
 1000  
 0



Sidewalk Plan  
 Boulevard Paving and  
 Grass Verge

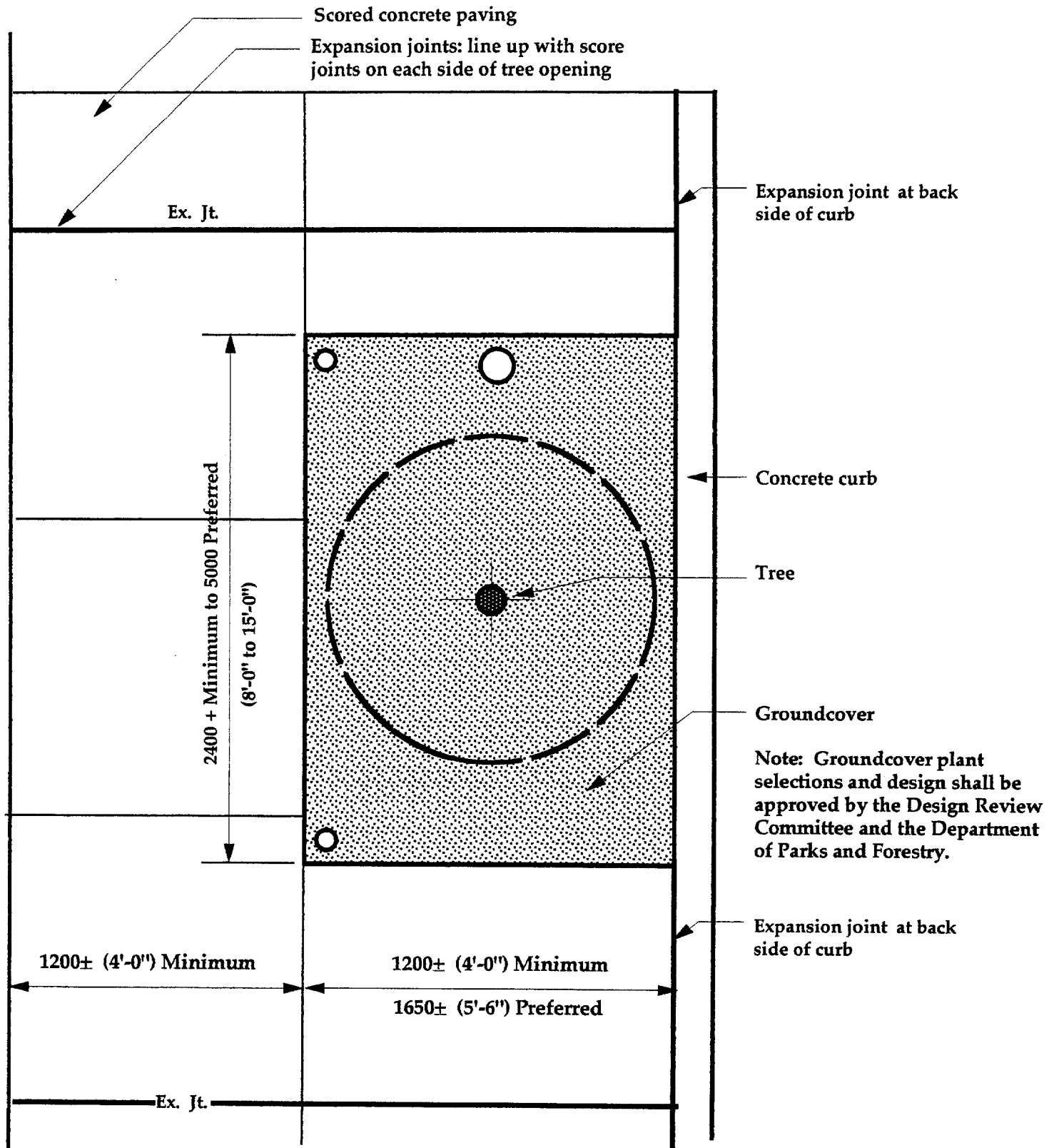


Sidewalk Plan  
 Boulevard with Grass Verge



24

# **Revised Sidewalk Plan Secondary Streets Concrete Paving**



25

Revised Sidewalk Plan  
Secondary Streets  
Tree in Concrete Paving

**Page 25**

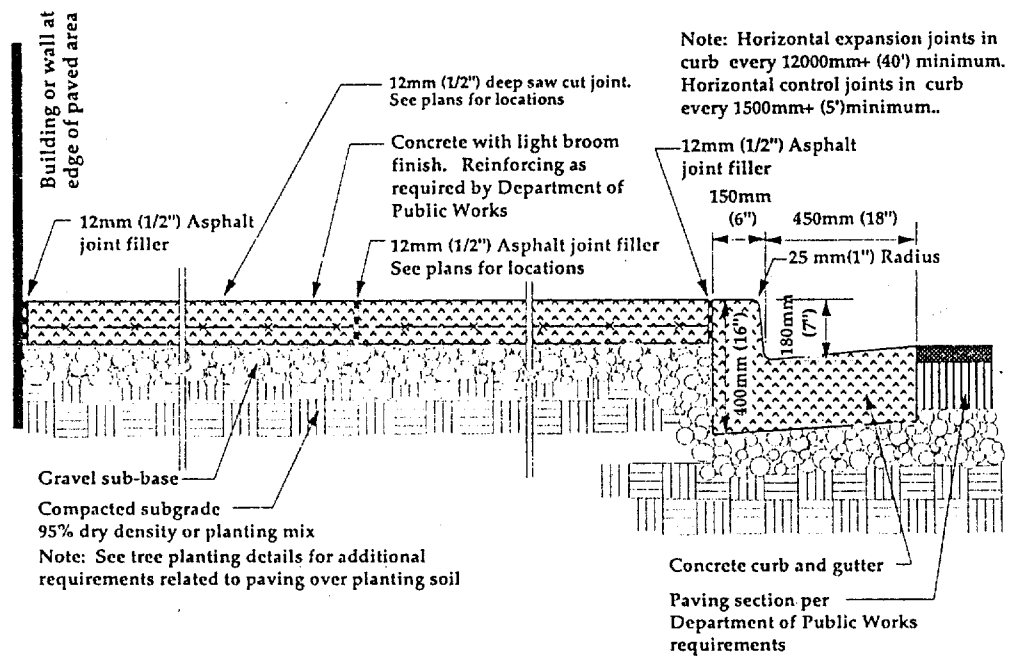
Delete: Column 1, Paragraph 1

Insert: On narrow secondary streets a concrete sidewalk as shown in illustration 24 is the standard paving material. Conditions vary on the secondary streets. Trees are optional. In areas where there is no on-street parking adjacent to the curb, plant street trees in a continuous grass or planted verge. Where there is planting space between the back edge of the sidewalk and the adjacent use, such as at a parking area or adequate building set back, plant the "street tree" in that planting space. Additional street trees in randomly spaced openings should be planted where ever possible. The tree openings may vary in width and length so that the opening is maximized for each tree. In these areas final locations should be approved by the Design Review Committee and the Department of Parks and Forestry. In some areas existing conditions will conflict with street trees. No trees should be planted on those streets where the sidewalks are under 8' wide, there are extensive underground utilities or there is a conflict with on-street parking or adjacent retail use. A more detailed plan of a tree opening in concrete paving is shown in illustration 25..

Delete: Column 1, Paragraph 2 Line 5 as indicated.

A concrete sidewalk and grass verge [24] is the standard on the north side of Waterside Drive and on Union Street. A more detailed plan of the concrete paving with a brick or grass verge is shown in illustration 25.

Illustration 26 shows a section through the paving and curb for a concrete sidewalk including expansion joints, and a diagram of the joint between concrete and brick paving on boulevards where there is a brick verge.



Details  
Concrete Paving

*Note: all drawings in this publication are for illustration purposes only and are not intended to describe actual construction details.*

## Trees and Tree Planting

Page 26

Delete: Column 1, Paragraph 5

Delete: Illustration 27 Area Plan: Street Tree Planting

Insert: Illustration 27: Revised Area Plan: Street Tree Planting

## Trees and Tree Planting

The map [27] shows that each of the most important downtown streets will be planted with its own distinctive tree species.

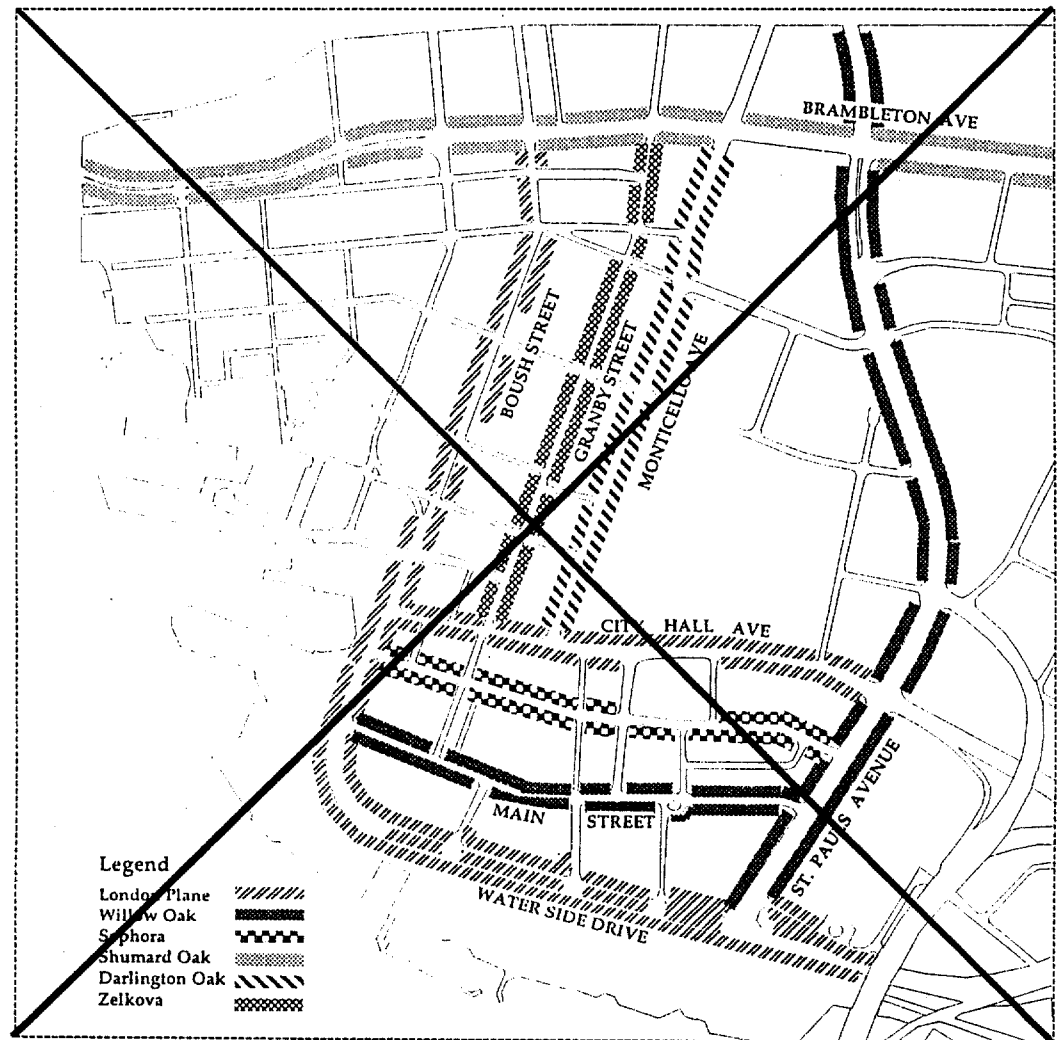
*Waterside Drive, City Hall Avenue and Boush Street:*  
London Plane Trees (*Platanus x acerifolia* "Bloodgood") which are currently planted on Waterside Drive.

*Main Street and St. Paul's Boulevard:*  
Willow Oak (*Quercus phellos*), which are currently planted there.

*Brambleton Avenue:*  
Zelkova (*Zelkova serrata*)

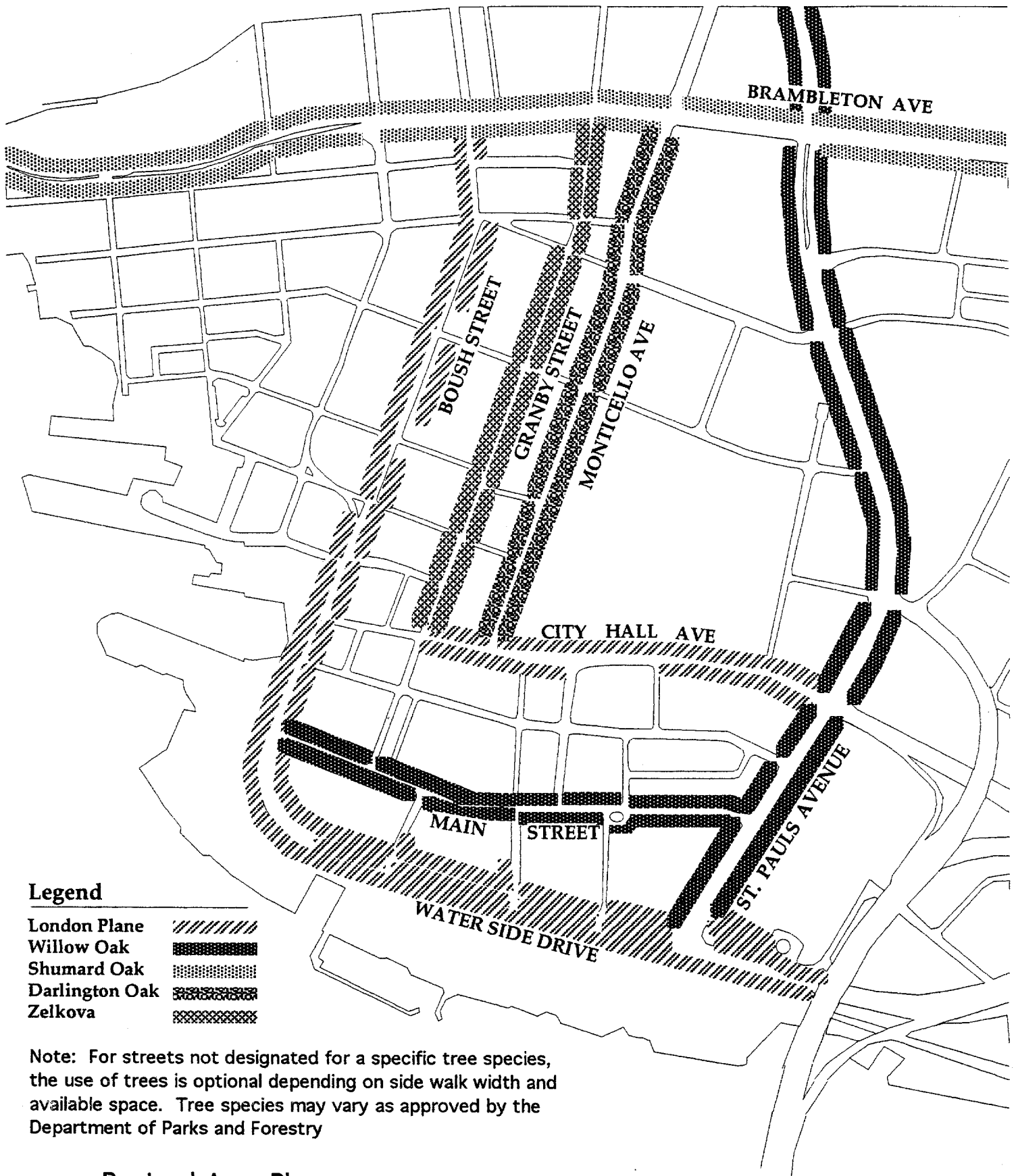
*Monticello Avenue:*  
Darlington Oak (*Quercus hemisphaerica* "Darlington")

*Plume Street:*  
Japanese Pagoda Tree (*Sophora japonica* "Regent") with the "Princeton Upright" variety (*Sophora japonica* "Princeton Upright") where the sidewalk is narrow.



Area Plan  
Street Tree Planting





### Legend

London Plane	Diagonal lines (top-left to bottom-right)
Willow Oak	Solid black fill
Shumard Oak	Stippled pattern
Darlington Oak	Cross-hatch pattern
Zelkova	Wavy line pattern

Note: For streets not designated for a specific tree species, the use of trees is optional depending on side walk width and available space. Tree species may vary as approved by the Department of Parks and Forestry

## 27 Revised Area Plan Street Tree Planting

Page 27

Delete: Street Tree Plant List: Primary Streets, Section 5: Plume Street

The table at right gives a supplemental list of tree species for use on other streets. Final tree selection is subject to the approval of Recreation, Parks and General Services and the Design Review Committee for all projects. Tree species not listed may be used on streets that have not been designated for a specific tree species with the approval of Recreation, Parks and General Services and the Design Review Committee.

## Street Tree Plant List

### Primary Streets

**Waterside Drive, City Hall Avenue and Boush Street**

Platanus x acerifolia 'Bloodgood' - London Plane Tree

**St. Paul Boulevard and Main Street**

Quercus phellos - Willow Oak

**Brambleton Avenue**

Quercus shumardii - Shumard Oak

**Monticello Avenue**

Quercus hemisphaerica "Darlington" - Darlington Oak

**Plume Street**

~~Sophora japonica 'Regent' - Japanese Pagoda Tree~~

~~Sophora japonica 'Princeton Upright' (in narrower areas)~~

**Granby Street**

Zelkova Serrata 'Green Vase' - Upright Zelkova

*Note: Designated tree species for the primary streets may be revised with the approval of the Department of Recreation, Parks and General Services and the Design Review Committee*

### Supplemental List for use on Secondary Streets

Acer buergerianum - Trident Maple

Acer campestre - Hedge Maple

Acer rubrum 'Red Sunset'

Betula nigra 'Heritage' - River Birch - (single stem only)

Celtis occidentalis - Common Hackberry

Celtis occidentalis 'Prairie Pride' - Prairie Pride Hackberry

Cercidiphyllum japonicum - Katsura tree

Ginkgo biloba - Ginkgo (male cultivars only)

Ilex attenuata - East Palatka Holly

Koeleruteria bipinnata - Bougainvillea Goldenrain tree.

Koeleruteria paniculata - Goldenrain tree

Liquidambar styraciflua 'Rotundiloba' - Seedless Sweetgum

Pistacia chinensis - Chinese Pistache

Platanus x acerifolia 'Bloodgood' - London Plane Tree

Platanus x acerifolia 'Columbia' - London Plane Tree

Platanus x acerifolia 'Liberty' - London Plane Tree

Pyrus calleryana 'Red Spire' - Red Spire Pear

Pyrus calleryana 'Trinity' - Trinity Pear

Quercus acutissima - Sawtooth Oak

Quercus hemisphaerica 'Darlington' - Darlington Oak

Quercus phellos - Willow Oak

Sophora japonica 'Princeton Upright' - Upright Sophora

Sophora japonica 'Regent' - Sophora

Taxodium distichum - Bald cypress

Tilia cordata 'Greenspire' - Little Leaf Linden

Ulmus americana 'Liberty' - Liberty Elm

Ulmus parvifolia - Lace Bark Elm

Zelkova serrata 'Village Green' - Zelkova

*Note: Final tree selections of trees from this list for specific locations are subject to the approval of Division of Parks and Forestry for all projects.*

*Tree species not noted may be used subject to the approval of Divisions of Parks and Forestry and City Planning on a project by project basis.*

*Additions or deletions to the Supplemental List of Street Trees may be made with the approval of the Divisions of Parks and Forestry and City Planning.*

**Page 28**

Column 1, Line 2 Planting Diagram as indicated

Insert: - For Primary Streets

Delete: Illustration 28- Sidewalk Plan: Tree Planting

Insert: Illustration 28- Revised Sidewalk Plan: Tree Planting

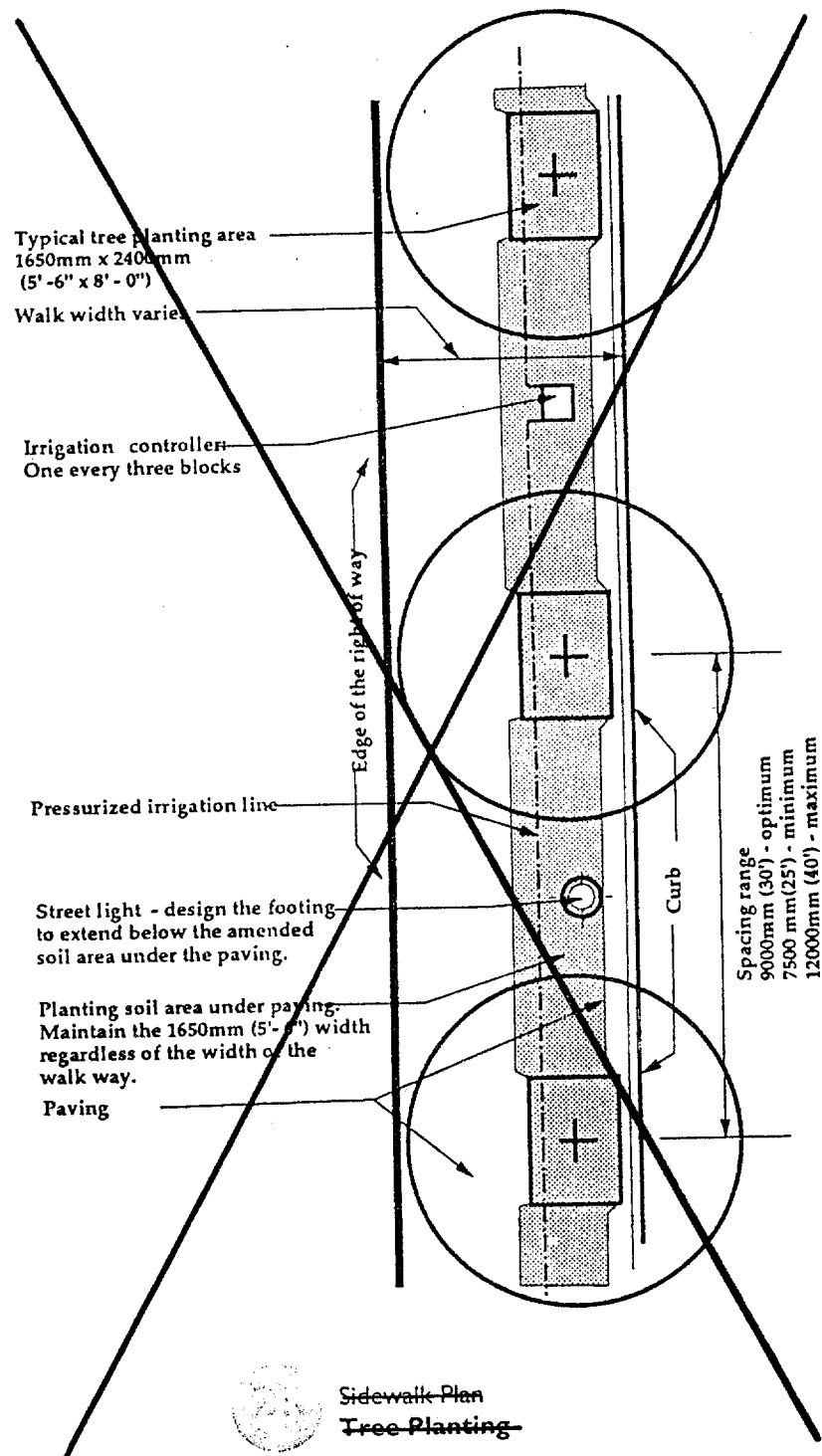
## Typical Downtown Tree Planting Diagrams

As noted above, the new Downtown Standard eliminates tree grates.

Wherever possible, the tree opening is moved back from the curb the width of two sailor courses of brick, so that people can step out of parked cars without stepping into the tree opening. Soil will be covered with solite gravel, or, with the approval of the Department of Recreation, Parks and General Services, planted with an evergreen ground cover.

A zone of planting-soil 5' 6" wide underneath the concrete paving will connect the tree openings as shown in Illustration 28. There will also be a continuous pressurized irrigation line as shown. (The actual design of this system must be approved by the Department of Recreation, Parks and General Services.)

Illustration 29 shows the tree-planting plan in more detail.



Typical tree planting area  
1650 x 2400 (5' - 6" x 8' - 0")

Walk width varies

Irrigation controller:  
One every three blocks

Edge of the right of way

Pressurized irrigation line

Street light - design the footing  
to extend below the amended  
soil area under the paving.

Planting soil area under paving.  
Maintain the 1650 (5' - 6") width  
regardless of the width of the  
walk way.

Paving

Curb

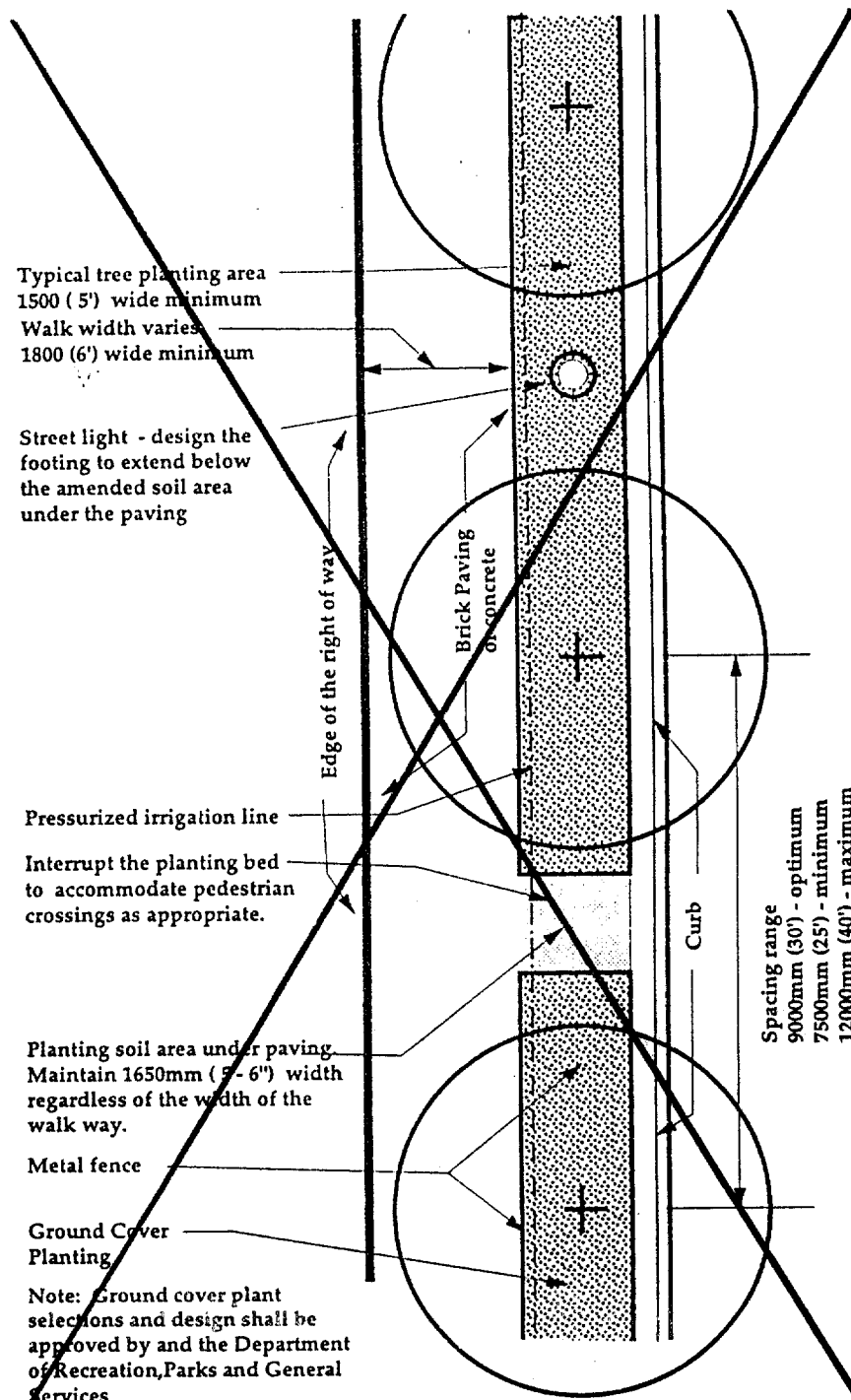
Spacing range  
10500 (35') - optimum  
9000 (30') - minimum  
12000 (40') - maximum

(28) Revised Sidewalk Plan  
Primary Streets  
Tree Planting

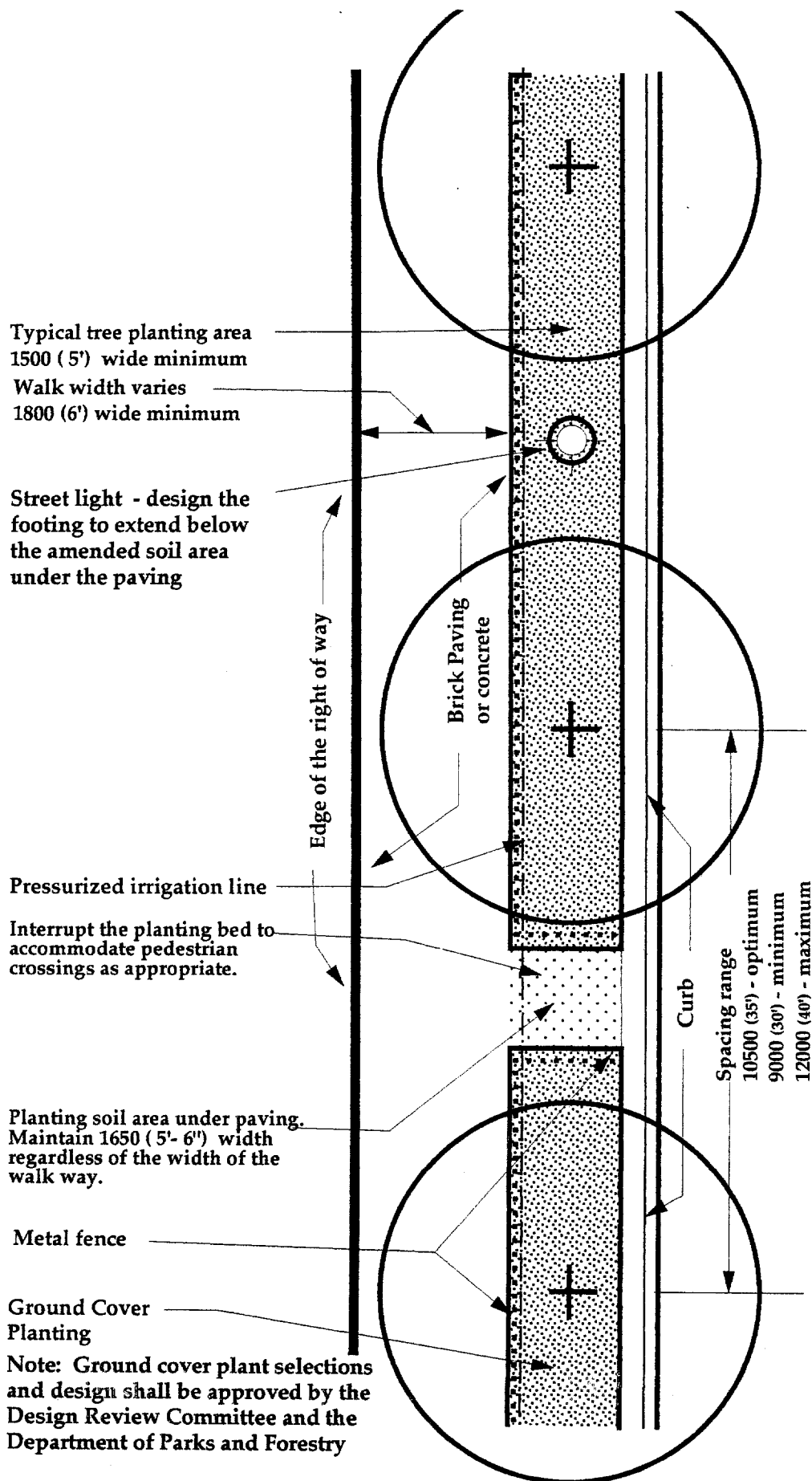
## Tree Planting in the Optional Verge

Illustration 33 shows the sidewalk plan when trees are planted in the optional, continuous verge.

Illustrations 34 and 35 give details of the way trees should be planted in this verge.



**Sidewalk Plan  
Tree Planting in the  
Optional Verge**



### 33 Revised Sidewalk Plan Tree Planting in the Grass Verge



**After Page 35**

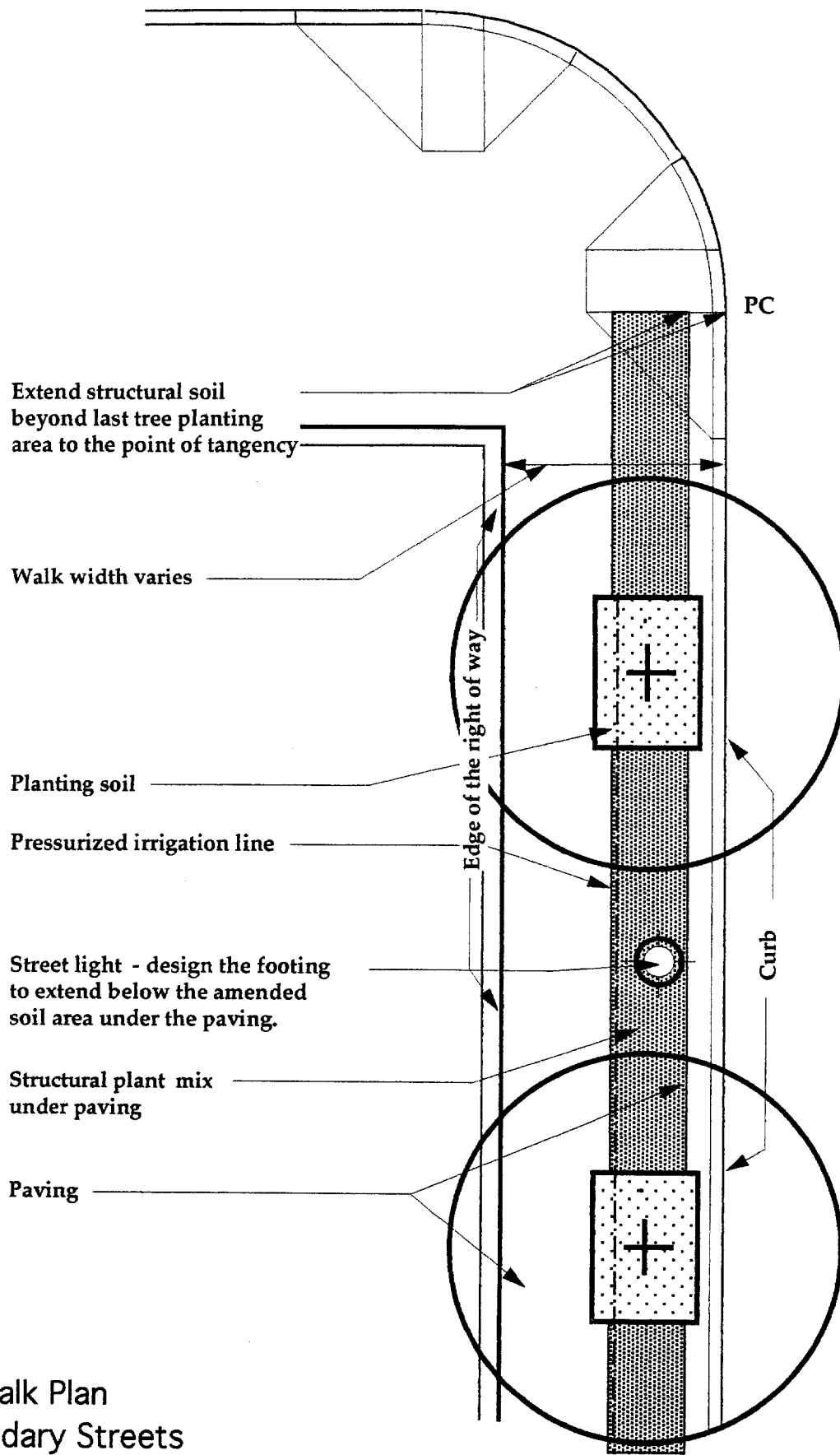
Insert: The following text

### **Tree Planting on Secondary Streets**

On those secondary streets which are suitable for street trees, trees should be planted in a continuous grass verge where ever possible. In those areas where conditions will not permit a grass verge, trees should be planted in planting areas which have a minimum width of 4' and are 8' to 15' long. Tree planting areas will be planted with groundcover plants. The standard planting details for primary streets, shown in Illustrations 28 through 35, are the preferred planting details.

There are two alternatives when it is not possible to install a continuous planting soil area under the paving. In the first a 4' x 2' shaft of structural plant mix beneath the concrete paving will connect the tree openings as shown in Illustrations 38a through 38d. The second option shown in Illustrations 38e through 38h consists of lines of parallel root paths under the paving between tree planting areas.

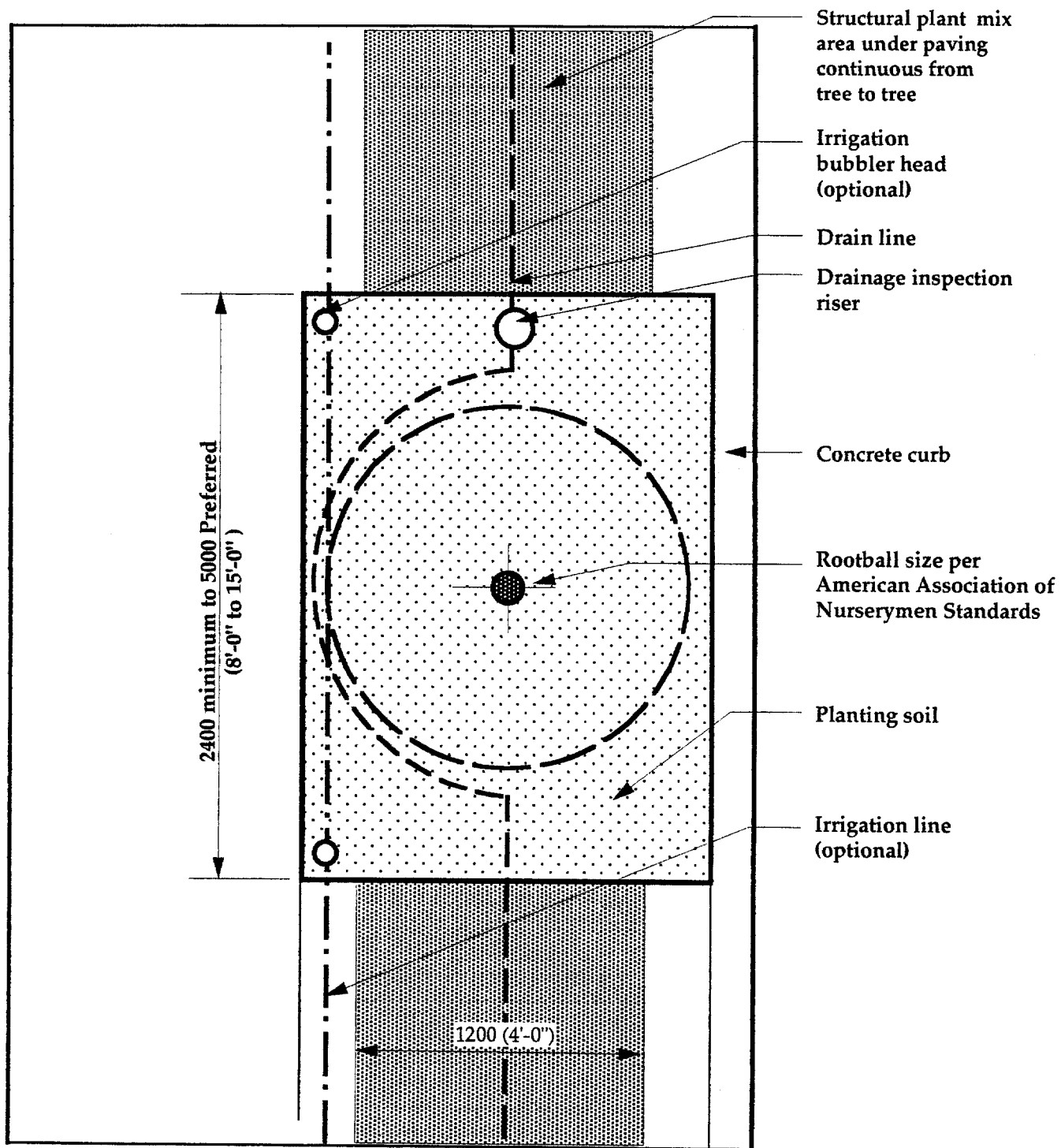
Insert Illustrations 38a through 38i



38a

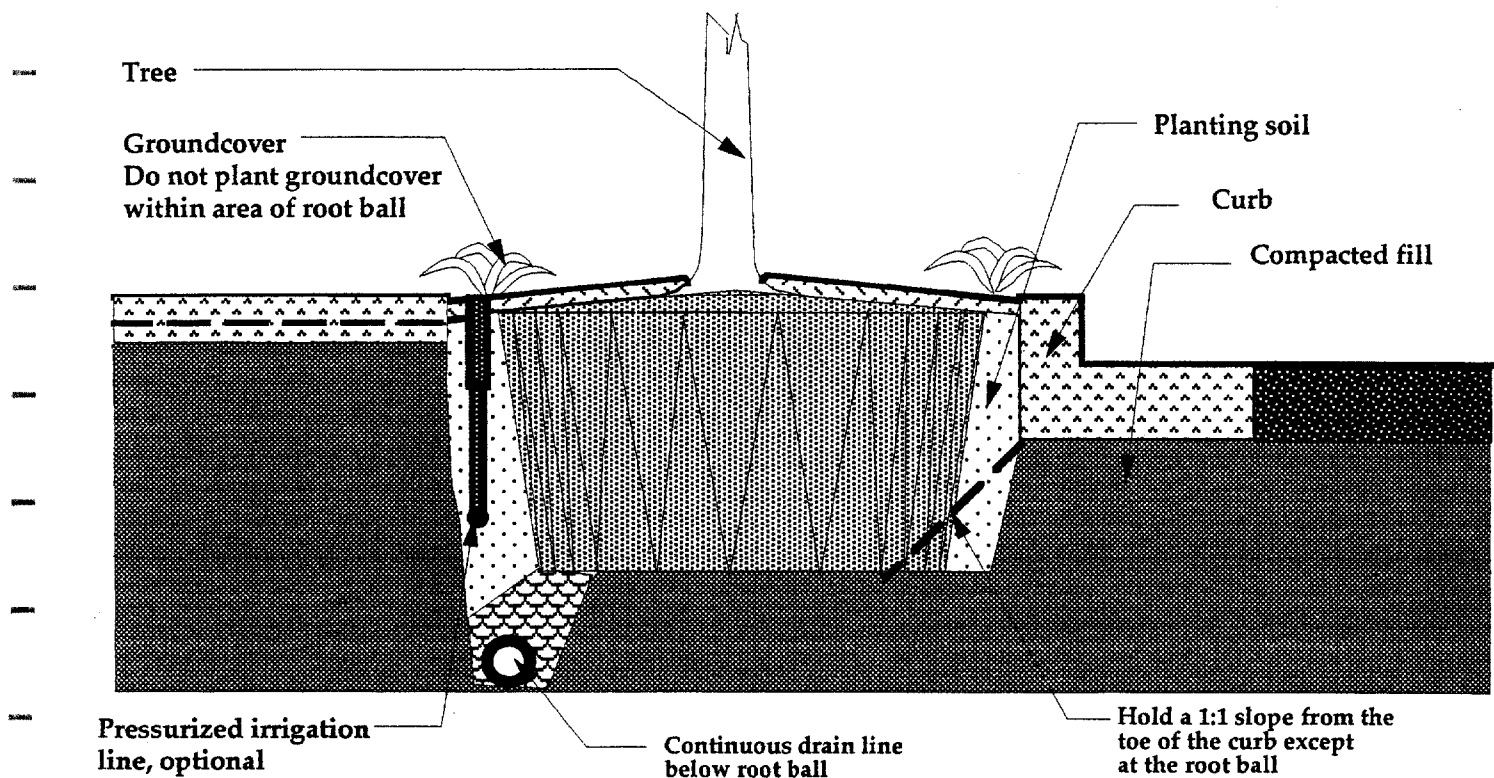
Sidewalk Plan  
Secondary Streets

Tree Planting: Alternate Root Space- Structural Plant Mix



38b

Plan  
Secondary Streets  
Tree Planting:  
Alternate Root Space: Structural Plant Mix



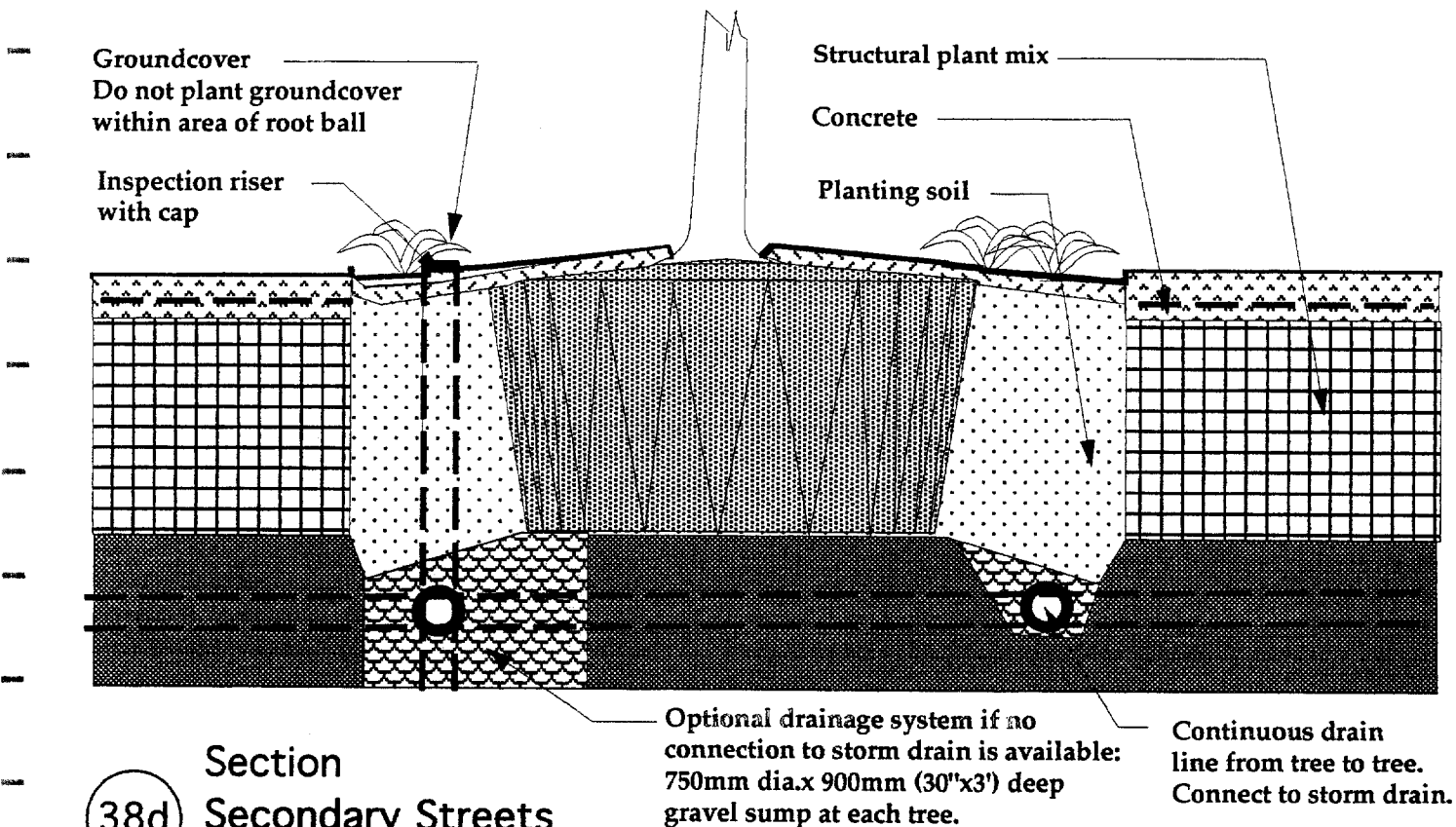
## Section

38c

## Secondary Streets

### Tree Planting: Alternate Root Space

### Structural Plant Mix Perpendicular to Curb



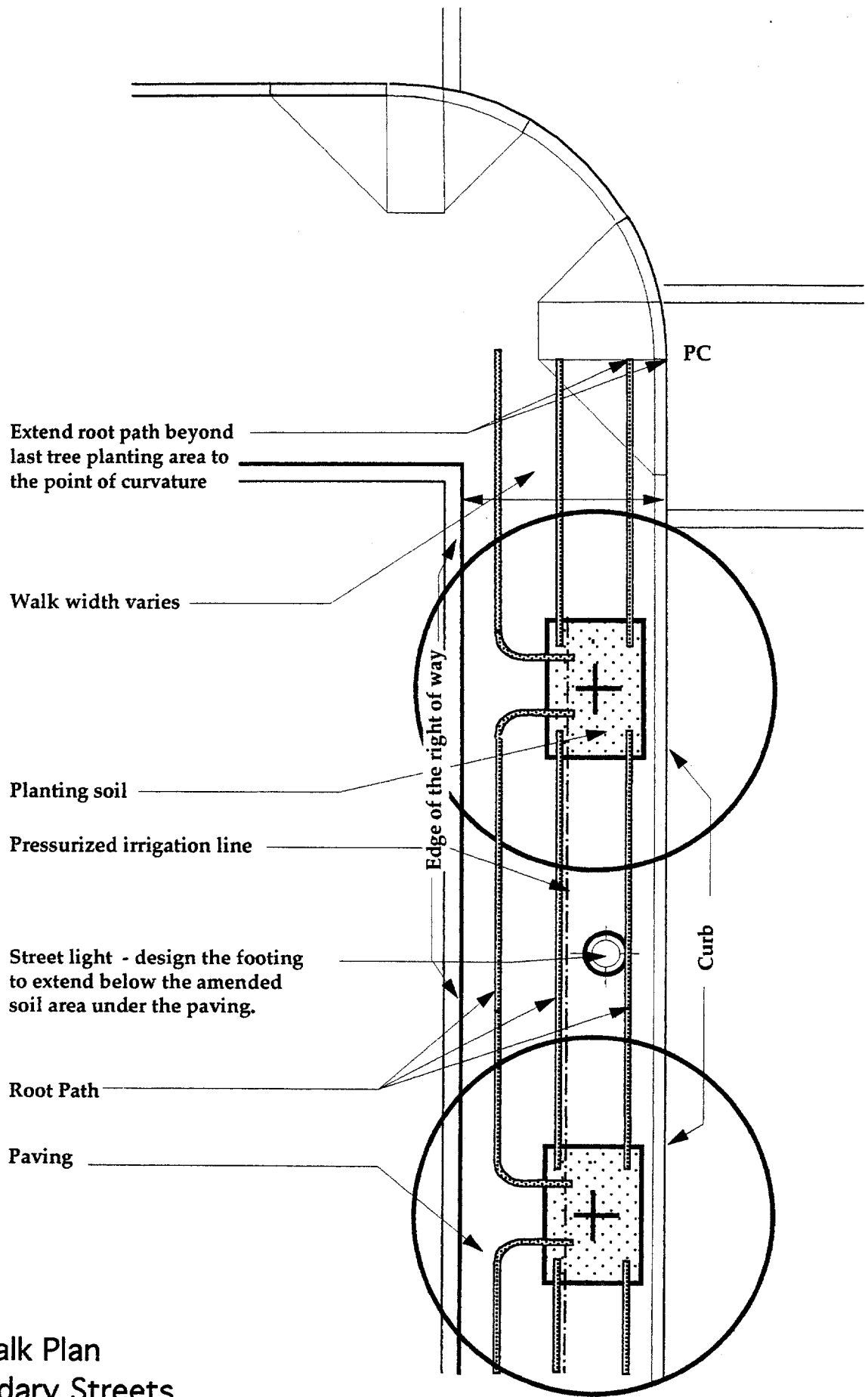
## Section

38d

## Secondary Streets

### Tree Planting: Alternate Root Space

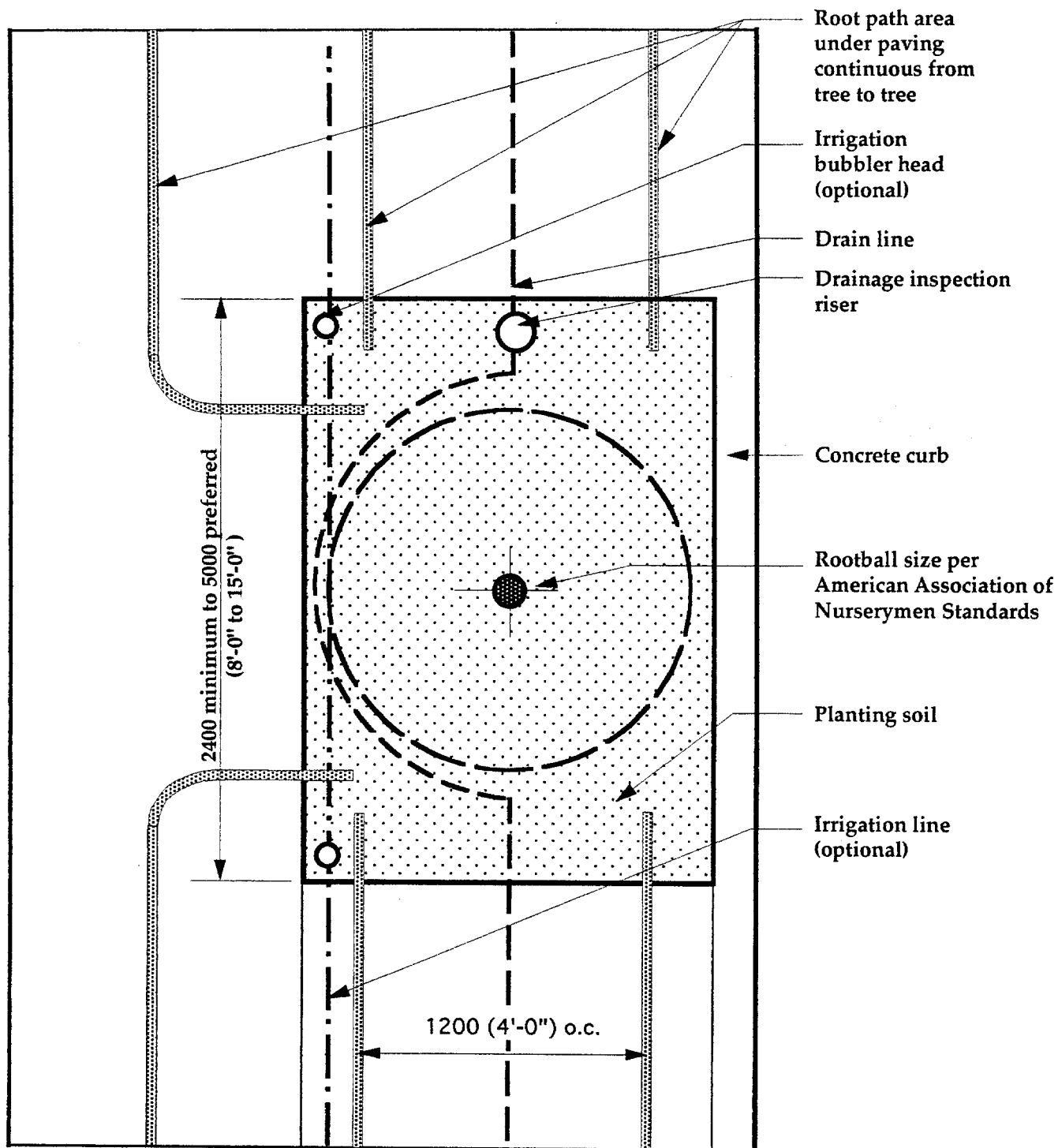
### Structural Plant Mix Parallel to Curb



38e

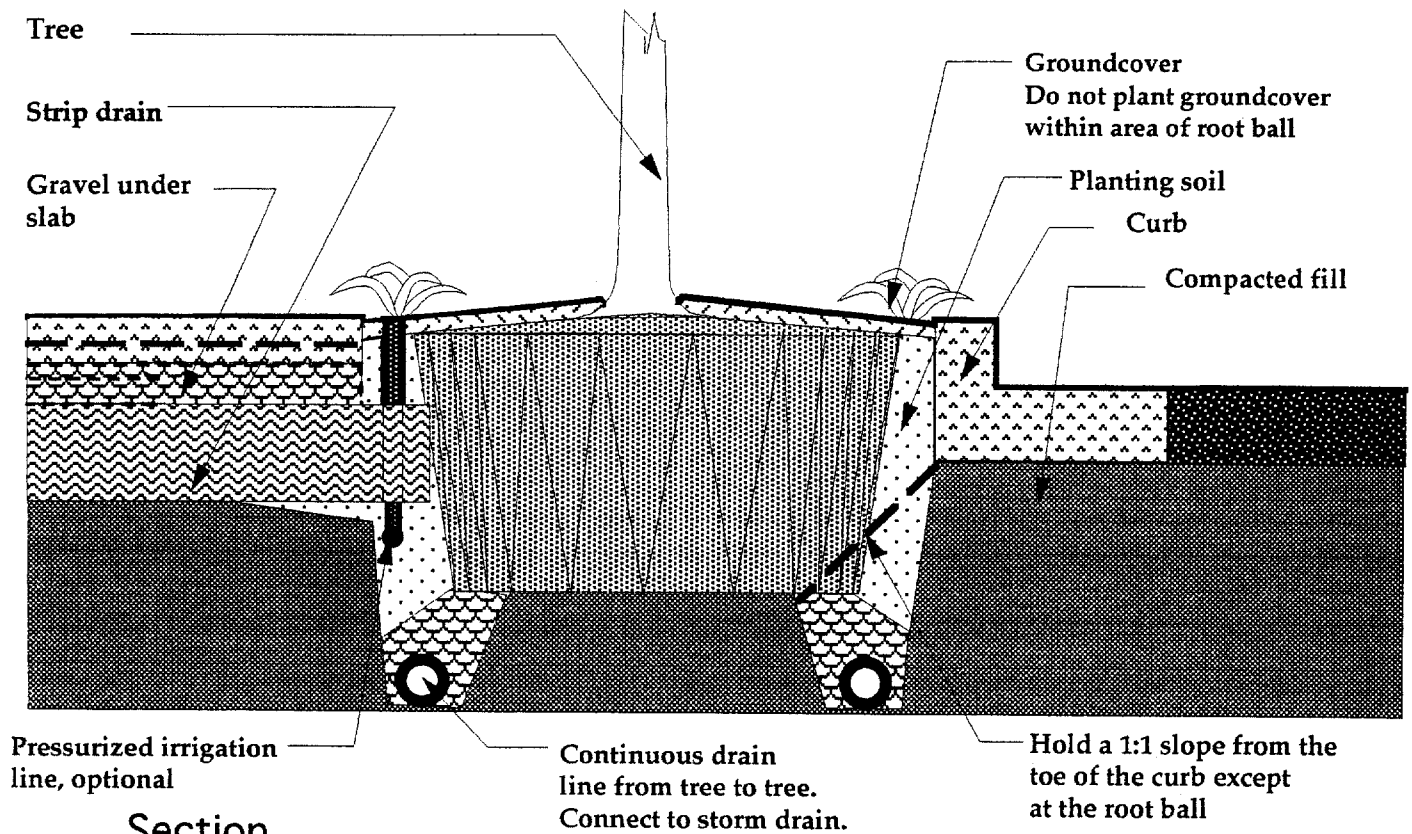
# Sidewalk Plan Secondary Streets

Tree Planting: Alternate Root Space- Root Paths



38f

Plan  
Secondary Streets  
Tree Planting:  
Alternate Root Space: Root Paths



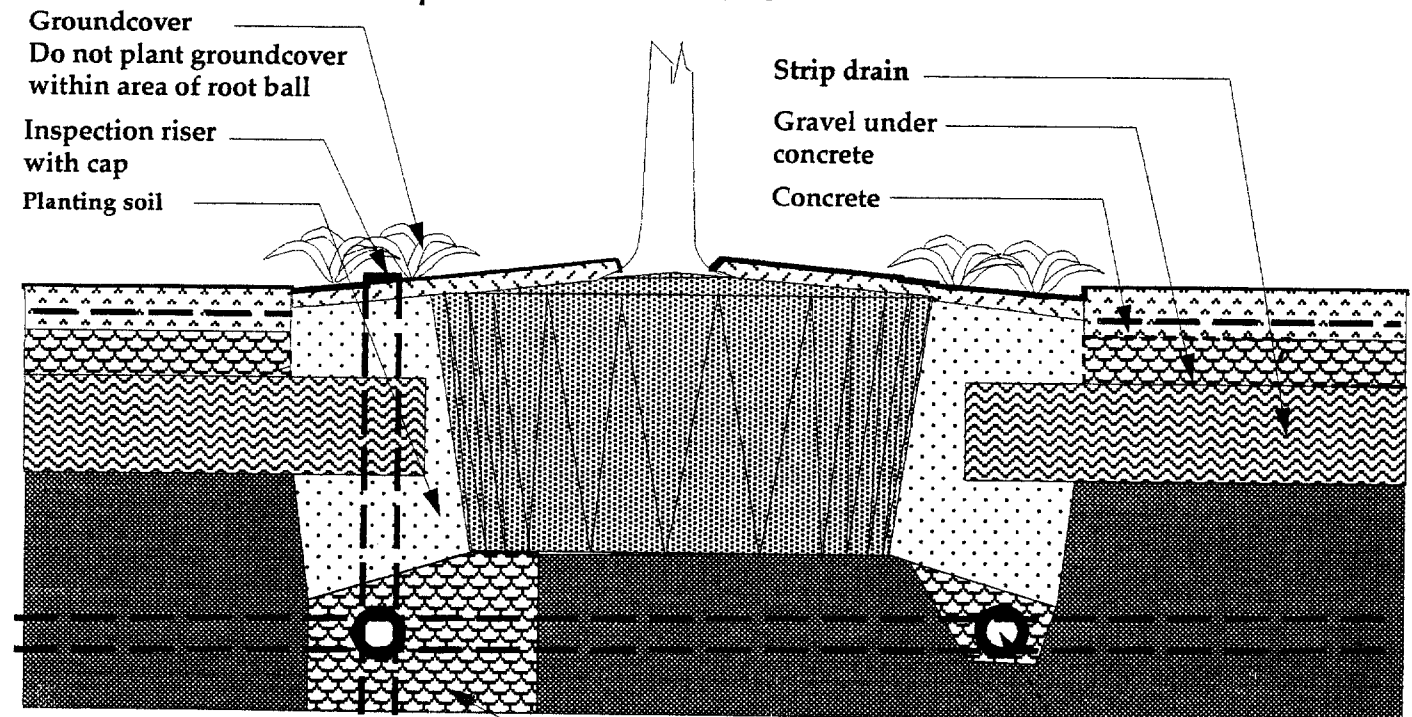
## Section

38g

## Secondary Streets

### Tree Planting: Alternate Root Space

### Root Paths Perpendicular to Curb



38h

## Section

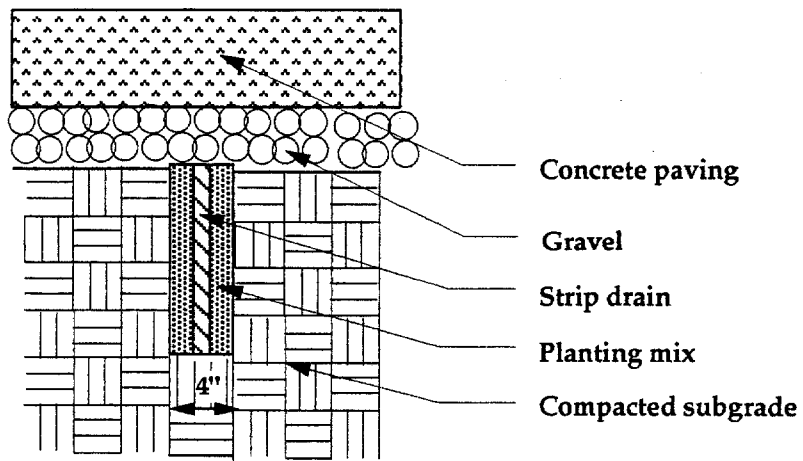
## Secondary Streets

### Tree Planting:

### Alternate Root Space: Root Paths Parallel to Curb

Optional drainage system if no connection to storm drain is available: 750mm dia.x 900mm (30"x3") deep gravel sump at each tree.

Continuous drain line from tree to tree. Connect to storm drain.



38i

Detail  
Root Paths



After Paragraph 5  
Insert:

Structural Plant Mix: A mixture of crushed stone, top soil, hydrogel and water mixed at approximately the following proportions as measured by units of weight:

Crushed Stone	100
Clay Topsoil	15-18
Hydrogel	0.03
Water	10

All material except water shall be measured using its calculated dry weight. Water weight shall include any water estimated to be in the stone or soil. Stone, soil, hydrogel and water shall be defined, mixed and installed in accordance with the Structural Plant Mix specification prepared by the City of Norfolk.

Root Path: Strip drain material set under the pavement in 4" wide by 12" deep trenches that connect from tree to tree to expand the rooting opportunity area for the tree. After the strip drain is set in the trench, backfill the remaining area of the trench with planting soil.

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